ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 73.622(b),	)	MM Docket No. 99-289
Table of Allotments,	)	RM-9668
Digital Television Broadcast Stations.	)	
(Champaign, Illinois)	)	
	)	
To: Mass Media Bureau	)	

REPLY COMMENTS OF MIDWEST TELEVISION, INC.

Midwest Television, Inc. (Midwest), licensee of WCIA(TV) in Champaign, Illinois, submits these reply comments to respond to the comments filed in the above-reference proceeding and to urge the Commission to adopt the proposal, set forth in the Notice of Proposed Rulemaking (*Notice*), to amend Section 73.622(b) of the Commission's rules, the DTV Table of Allotments (DTV Table), to substitute Channel 5 for Channel 48 allotted to Champaign, Illinois and to assign Channel 5 as the paired DTV channel for WCIA(TV) with a power level of 4.5 kW and antenna height above average terrain (HAAT) of 287 meters. As demonstrated herein and in the attached Engineering Statement, the comments filed in opposition to the proposal do not raise any material issue that should preclude the Commission from amending the DTV Table as proposed.

DISCUSSION

There is no dispute that the proposed amendment to the DTV Table satisfies the criteria for modification of a DTV allotment set forth in Section 73.623(c)(2) of the Commission's rules. The only objections raised in the comments are based on considerations that are outside the scope of the Commission's Rules. The opposing comments all relate to the potential for interference to land mobile and land mobile-related operations (for simplicity

referred to as "land mobile operations") in the 72-76 MHz band adjacent to TV Channel 5. These hypothetical and technically unfounded interference concerns do not justify the Commission's foreclosing the use of a channel expressly allocated to broadcasting for a digital television use that will serve the public interest by promoting the smooth transition to DTV in Central Illinois.

A. Channel 5 Is Allocated To Television Broadcast Service And Must Be Available For Digital Television Use.

There is no question that Channel 5 (76-82 MHz) is allocated for television broadcasting use. *See* 47 C.F.R. § 2.106. Moreover, it is critically important that this spectrum *in fact* be available for television during the DTV transition, when each full service broadcaster will be operating simultaneously both an analog and a digital television station.[1] Broadcasters must have access to the full range of what limited spectrum is available for DTV to have the flexibility to develop DTV proposals that will bring DTV service to the widest possible audience in the most efficient, cost-effective and expeditious manner possible.

As the Commission has recognized, the process of assigning an additional 6 MHz DTV channel to each full-service broadcaster, while also (i) ensuring to the fullest extent possible the replication of existing NTSC service areas, (ii) minimizing interference to both existing analog TV and new DTV service, and (iii) planning for the future recovery of a portion of the spectrum now used for television broadcasting, has been extremely difficult and complex,

[1] The Commission has determined that this approach of requiring each full-service broadcaster to transmit simultaneous analog and digital signals during the transition period will best promote "an orderly transition to the new service." Sixth Report and Order, *In re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, 12 FCC Rcd 14588, 14595 (1997) ("*DTV Sixth Report & Order*").

particularly in a broadcast environment already characterized by scarcity of available spectrum.[2] This is particularly so in congested regions of the country such as the Great Lakes region, which includes the state of Illinois.[3] In executing this difficult task, the Commission concentrated its DTV allotments in a "core spectrum" band representing what eventually would become the narrowed broadcast band after the end of the DTV transition and the recovery of analog spectrum. Initially, the Commission proposed a DTV core spectrum of Channels 7-51.[4] However, the Commission from the outset allotted DTV channels on Channels 2-6 as well as Channels 7-51, "without bias against the use of any channel in this band,"[5] and ultimately revised the DTV core spectrum to cover Channels 2-51.[6]

Throughout the discussion of what spectrum would be used for the DTV core, no concerns were raised about the potential for DTV operations on Channel 5 to interfere with

---

[2] *See* Sixth Further Notice of Proposed Rulemaking, *In re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, 11 FCC Rcd 10968, 10994 (1996) ("*DTV Sixth Further Notice*") (noting that preliminary studies indicated that "it [would] be a challenge just to provide all full service licensees with an additional 6 MHz for DTV"); Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order, *In re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, 13 FCC Rcd 7418, 7425 (1998) ("*DTV MO&O on Reconsideration of Sixth R&O*") ("[T]he DTV allotments are the product of a balancing among many different interests and goals, such as the recovery of channels 60-69, protection of land mobile service, replication of NTSC service, minimization of interference, etc.").

[3] *See* Petition for Clarification and Partial Reconsideration of the Fifth and Sixth Reports and Orders Submitted by the Association for Maximum Service Television and the Broadcasters' Caucus, MM Docket No. 87-268 (June 13, 1997); *DTV MO&O on Reconsideration of Sixth R&O*, 13 FCC Rcd at 7425, 7430.

[4] It should be noted, however, that the decision to locate the core band in Channels 7-51 had nothing to do with avoiding interference to non-broadcast services operating between Channels 4 and 5; it was based upon concerns about how the technical characteristics of Channels 2-6 would affect DTV transmissions. *DTV Sixth Further Notice*, 11 FCC Rcd at 10977-80; *see also DTV Sixth Report & Order*, 12 FCC Rcd at 14610.

[5] *DTV Sixth Report & Order*, 12 FCC Rcd at 14624, 14627.

[6] *DTV MO&O on Reconsideration of Sixth R&O*, 13 FCC Rcd at 7435-37.

existing land mobile operations in the 72-76 MHz band, and there was no suggestion that DTV use of Channel 5 should be limited to prevent interference to land mobile operations.[7] This is distinguishable from the situation with respect to Channel 6, where FM broadcasters raised concerns about potential interference to FM stations from DTV operations on Channel 6. In that case, the Commission recognized the interference concerns as legitimate and chose to "avoid[] the use of channel 6 for DTV wherever possible" and to require that "parties requesting allotment of new DTV allotments on channel 6 submit an engineering study to demonstrate that no interference would be caused to existing FM radio stations on FM channels 200-220."[8] No similar restrictions were imposed on the use of Channel 5 for DTV.

The Commission's (and commenters') lack of concern about potential interference between DTV operations on Channel 5 and existing land mobile operations at 72-76 MHz was justified in light of the lack of any historical evidence of interference problems between these services at these frequencies. For example, the Commission observed in a 1973 proceeding that "[t]he communications provided by [low power mobile] operations [in the 72-76 MHz band] have been satisfactory despite the existence of high power TV transmitters on

[7] In its comments, McLeodUSA Telecommunications Services notes that Channel 5 is used in the DTV Table on only five instances, and suggests that this is because "Channel 5 is not typically allocated for digital television." Comments of McLeodUSA Telecommunications Services, Inc., MM Docket No. 99-289, at 7 (Nov. 9, 1999). However, given the Commission's express statement that it did not disfavor Channel 5 in assigning DTV allotments, it seems most likely that the few DTV assignments to Channel 5 are the result of the already heavy use of Channel 5 and the surrounding low-VHF channels for analog television stations. *See* 47 C.F.R. § 73.606 (TV Table of Allotments). As discussed more fully below, this heavy use of Channel 5 for analog television has not produced evidence of significant interference to land mobile operations in the 72-76 MHz band.

[8] *DTV MO&O on Reconsideration of the Sixth R&O*, 13 FCC Rcd at 7437.

adjacent channels."[9] Even where concerns about interference to adjacent land mobile operations were raised with respect to DTV operations on UHF Channels 14-20, the Commission did not consider the interference threat to be significant and concluded that "we believe that there are engineering solutions available to handle any adjacent channel interference concerns between land mobile and DTV."[10]

Nothing in the comments filed in this proceeding justifies the Commission's departing from its determination in the DTV proceeding that Channel 5 should be available for DTV without limitation. The commenters' concerns about potential interference from the proposed DTV operations are over-inflated, and the public interest benefits from the proposal described in Midwest's Petition for Rulemaking and its initial comments in this proceeding remain valid and fully justify adoption of the proposal to substitute Channel 5 for Channel 48 as WCIA's DTV allotment.

B. The Proposed DTV Operation Is Unlikely To Cause Interference To Land Mobile Operations In Adjacent Spectrum.

According to the Engineering Statement prepared on behalf of Midwest by the consulting engineers of du Treil, Lundin & Rackley, Inc., which is attached hereto as Exhibit A, the Commission's general lack of concern about interference between DTV operations on Channel 5 and land mobile operations in the 72-76 MHz band can be extended to the specific DTV operation proposed for WCIA-DT in Champaign and the commenters' land mobile operations. The Engineering Statement clearly demonstrates that there is little likelihood that

---

[9] Memorandum Opinion and Order, *In re Amendment of the Commission's Rules and Regulations to Provide for the Licensing of Auditory Training Devices for the Partially Deaf in the Bands 72-73 and 75.4-76 MHz*, Docket No. 19185, 39 F.C.C.2d 983, 987 (1973).

[10] *DTV Sixth Further Notice*, 11 FCC Rcd at 11007.

Midwest's proposed DTV operations on Channel 5 will cause any interference to the land mobile operations of the commenting parties.

The Engineering Statement explains that a number of factors not taken into account by the commenters significantly diminish the likelihood of interference between WCIA's proposed DTV operation on Channel 5 and the commenters' land mobile operations. These factors include the difference in occupied bandwidth between a DTV facility and the affected land mobile receivers; the different polarization of WCIA's DTV antenna and the affected land mobile antennas; and propagation loss. For the McLeodUSA and Illinois Signal paging repeaters, the Engineering Statement contains detailed interference analyses demonstrating that, when the relevant factors are taken into account, the likelihood of interference to the paging facilities is extremely low. Although the comments of Moultrie County, DeWitt County and Macon County did not contain sufficient engineering details about the potentially affected public safety operations to permit similar detailed interference analyses, it is nonetheless possible to conclude, in light of the factors described above and the frequency and distance separation between WCIA's proposed DTV facility and the commenters' public safety operations, that no interference is likely to be caused to the commenters' public safety operations.[11]

---

[11] See Report and Order, *In re Resolution of Interference Between UHF Channels 14 and 69 and Adjacent-Channel Land Mobile Operations*, MM Docket No. 87-465, 6 FCC Rcd 5148 (1991), in which the Commission noted, in the context of potential interference between TV operations on UHF Channels 14 and 69 and adjacent land mobile operations, that objectionable interference generally occurs only when the land mobile receiving station operates at a frequency within 3 MHz of the TV station's frequency and is located at a distance of less than 8 km from the TV transmitter site. As described in the Engineering Statement, the Moultrie and DeWitt County public safety facilities are well over 8 km from the proposed WCIA DTV transmitter site and operate at frequencies more than 3 MHz below Channel 5. Although the Macon County facilities operate at a frequency within 3 MHz of Channel 5, they are located at least 25 km from the proposed WCIA DTV transmitter site.

Based on the foregoing, there is little reason for concern about potential interference to the commenters' land mobile operations in the 72-76 MHz band. However, Midwest is committed to ensuring that its DTV operation on Channel 5 causes no harm to the public, and accordingly commits to cooperate with the commenting parties and any other existing users of adjacent spectrum to resolve any interference that in fact results from WCIA's DTV operation on Channel 5.

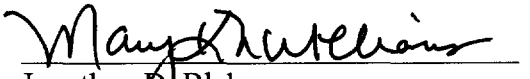
CONCLUSION

Midwest's Petition for Rulemaking and its opening comments show that amending the DTV Table as proposed in the *Notice* will serve the public interest by promoting the expeditious transition to digital television. In addition, the foregoing discussion and the attached Engineering Statement demonstrate that the proposed DTV operation poses little threat of interference to the land mobile operations of the commenting parties. Finally, Midwest has committed to cooperating with the affected entities to resolve any interference problems that should arise. Accordingly, Midwest respectfully urges the Commission promptly to amend Section 73.622(b) of the rules, as proposed in the *Notice*, to substitute Channel 5 for Channel 48

as the DTV channel assigned to WCIA(TV) with a power level of 4.5 kW and antenna HAAT of 287 meters.

Respectfully submitted,

MIDWEST TELEVISION, INC.

By: 

Jonathan D. Blake
Mary Newcomer Williams
COVINGTON & BURLING
1201 Pennsylvania Avenue, NW
P.O. Box 7566
Washington, D.C. 20044-7566
Phone: (202) 662-6000
Fax: (202) 662-6291

Its Attorneys

November 24, 1999

cc: Barbara Kreisman, Chief, Video Services Division, Mass Media Bureau (by hand)

CERTIFICATE OF SERVICE

I, Mary Newcomer Williams, hereby certify that on this 24th day of November, 1999, I caused a copy of the foregoing Reply Comments of Midwest Television, Inc. to be served by first class mail, postage pre-paid, on the following:

The Hon. Rieck Kendall
Sheriff
Moultrie County Sheriff's Office
14 N. Hamilton Street
Sullivan, IL 61951

The Hon. Roger W. Massey
Sheriff
DeWitt County Sheriff's Office
101 West Washington Street
Clinton, IL 61727

Robert M. Owen
Chairman, Macon County Board
Macon County, Illinois
Macon County Board Office
141 South Main Street
5th Floor
Decatur, Illinois 62523

Michele C. Farquhar
Hogan & Hartson, L.L.P.
555 Thirteenth Street, N.W.
Washington, DC 20044
Counsel for McLeodUSA Telecommunications Services, Inc.

Michael J. McCabe
Vice President of Engineering
Illinois Signal Communications, Inc.
926 Broadway
Quincy, Illinois 62301

Mary Newcomer Williams

Exhibit A

ENGINEERING STATEMENT
IN SUPPORT OF REPLY COMMENTS
PREPARED FOR
MIDWEST TELEVISION, INC.
CHAMPAIGN, ILLINOIS

This Engineering Statement was prepared on behalf of Midwest Television, Inc. in support of Reply Comments in MM Docket No. 99-289, which proposes the substitution of DTV Channel 5 for DTV Channel 48 at Champaign, Illinois. The proposed allotment would be occupied by the DTV facility of WCIA(TV). This engineering statement addresses comments in this docket that suggest that the WCIA Channel 5 DTV operation may cause interference to land mobile and land mobile-related operations (together, LM operations) in the 72-76 MHz band. As demonstrated herein, there is little likelihood of potential interference to LM operations from the proposed WCIA DTV Channel 5 facility. The Comments of each party will be addressed in turn below. But first some background information is provided.

Background and Discussion

The only comments opposing the proposal at issue concern LM operations in the frequency band from 72-76 MHz. This 4-MHz band falls between TV Channels 4 and 5. Channel 5 occupies the frequency band from 76 MHz to 82 MHz. So the bottom portion of Channel 5 is adjacent to the top of the 72-76 MHz band. The FCC established that Channel 5 would be one of the existing TV channels employed for the digital television transition in the FCC's digital television *Sixth Report and Order*[*] and subsequent orders.

---

* *See Sixth Report and Order*, MM Docket No. 87-268, 12 FCC Rcd 14588 (1997).

Because Channel 5 is immediately adjacent to LM operations in the 72-76 MHz band, there is the concern for potential interference between these facilities. However, there is strong evidence to indicate that DTV operations on channels adjacent to LM facilities will be able to provide sufficient interference protection to these stations. The Commission itself stated "...we believe that there are engineering solutions available to handle any adjacent channel interference concerns between land mobile and DTV."† This statement was made prior to the FCC adoption of a very strict DTV emission mask that limits adjacent channel emissions to no less than 41.4 dB at band edge to 110 dB at 6 MHz removed from band edge.‡ The addition of the strict DTV emission requirements further reduces the likelihood of interference to LM operations.

As detailed herein, a thorough interference analysis demonstrates that there is little threat of interference to LM operations from WCIA's proposed DTV facility on Channel 5. There are several factors that must be considered in preparing the analyses of interference from DTV facilities to LM related facilities, including the following:§

LM Bandwidth – The typical bandwidth of LM receivers in the 72-76 MHz band is about 15 kHz. The occupied bandwidth of a DTV facility is 5,380 kHz. The portion of energy that is delivered to the LM receiver must be adjusted to account for the difference in occupied bandwidth. This is given by the following formula:

DTV-coupled-into-LM = 10 log (15/5380) = -25.6 dB

---

† *See Sixth Further Notice of Proposed Rule Making*, MM Docket No. 87-268, 11 FCC Rcd 10968 (1996). This statement was made in the context of UHF land mobile operations, but would apply to the 72-76 MHz band as well.

‡ See Section 73.622(h)(1) of the FCC Rules.

§See *Comments of Motorola* in MM Docket No. 87-268, "Advanced Television Systems and Their Impact Upon Existing Television Broadcast Service," dated November 22, 1996 for additional discussion of these issues.

Polarization - LM antennas in the 72-76 MHz band are vertically polarized.** TV transmission antennas are typically horizontally polarized, although the FCC Rules allow for circular polarization and some stations now operate with circular polarization. For horizontally-polarized-only stations, there is a significant cross-polarization discrimination factor. This factor is typically estimated to be -20 dB. The proposed DTV facility on Channel 5 at Champaign, Illinois will operate with a horizontally polarized antenna.

Propagation Loss – For the purposes of the analyses detailed herein, the assumption of free-space propagation was made. Terrain profiles were prepared for all paths considered and all terrain paths are line-of-sight. Therefore, the path attenuation will be well approximated by the free-space assumption.††

It is also noted that all calculations were based on reference to an isotropic antenna as is appropriate when assuming free-space propagation conditions.

Comments of McLeodUSA Telecommunications Services, Inc. ("McLeodUSA")

The McLeodUSA paging infrastructure employs the 72-76 MHz band for link repeaters. McLeodUSA expresses concern about possible interference to its KWH311 link repeater, which employs a frequency of 75.84 MHz. In support of its contention, Appendix B of the McLeodUSA Comments is an interference analysis to the KWH311 Location 7 Receiver, which purportedly demonstrates objectionable levels of interference to the KWH311 Location 7 Receiver. However, as shown below, the McLeodUSA interference analysis is flawed and grossly overestimates the interference potential of the WCIA Channel 5 DTV operation.

** See Section 22.367 of the FCC Rules.

†† It is also noted that the FCC R-6602 Propagation Curves are not generally applicable to point-to-point interference analyses. The R-6602 curves were primarily developed for the purpose of estimating FM and TV station coverage and interference over an area. The curves were based on the assumption of a 30-foot (9.1-m) receiving antenna. If these curves were to be employed for estimating signal levels, an adjustment would have to be made for the receiving antenna height differential to obtain meaningful results.

We prepared a detailed interference analysis with respect to the KWH311 Receiver listed in Appendix B of the McLeodUSA Comments. Table I, below, is a summary of the calculation of the predicted desired signal at the KWH311 Location 7 Receiver location. Table II, below, is a summary of the calculation of the undesired WCIA DTV Channel 5 signal at the KWH311 Location 7.

Table I – Calculation of Desired Signal at KWH311 Receiver

Parameter	Value
Distance from desired transmitter to receiver	73.7 km
Bearing from desired transmitter to receiver	3.9° True
KWH311 maximum EIRP (ERPdipole=316 W)	+57.1 dBm
KWH311 transmitting antenna horizontal pattern discrimination (at 3.9°T)	-15.0 dB
Free-space path loss (73.7 km) (75 MHz)	-107.4 dB
Receive antenna gain	+9.2 dBi
Receive antenna horizontal pattern discrimination	0.0 dB
Receive line loss	-2.0 dB
Received desired KWH311 power	-58.1 dBm

Table II – Calculation of Undesired DTV Signal at KWH311 Receiver

Parameter	Value
Distance from undesired transmitter to receiver	14.6 km
Bearing from undesired transmitter to receiver	61.4° True
Proposed nominal EIRP (ERPdipole=4.5 kW)	+68.7 dBm
Out of band emissions (worst-case, band edge)	-41.4 dB
Coupling factor DTV into LM receiver	-25.6 dB
Cross-polarization discrimination	-20.0 dB
Free-space path loss (14.6km) (75 MHz)	-93.3 dB
Receive antenna gain	+9.2 dBi

Table II – Calculation of Undesired DTV Signal at KWH311 Receiver	
Parameter	Value
Receive antenna horizontal pattern discrimination (at 241.4° True)	-5.0 dB
Receive line loss	-2.0 dB
Received undesired DTV interference power	-109.4 dBm

Based on the above conservative calculations, the desired to undesired ratio at this receive location is calculated to be (-58.1 dBm – (-109.4 dBm) =) +51 dB. This is well below the threshold level for interference to the LM system receiver.[‡‡] Therefore, it is concluded that there will be no interference to the KWH311 receiver or its LM related systems.

Comments of Illinois Signal Communications, Inc. ("Illinois Signal")

The Illinois Signal paging infrastructure employs the 72-76 MHz band for distribution of paging data. Illinois Signal expresses concern about possible interference to its WPEC710 facility, which employs a frequency of 75.82 MHz. In support of its contention, an Engineering Study is included with the Illinois Signal Comments which purportedly demonstrates objectionable levels of interference to a WPEC710 receiver. However, as shown below, the Illinois Signal interference analysis is flawed and grossly overestimates the interference potential of the WCIA Channel 5 DTV operation.

A detailed interference analysis was prepared with respect to the same WPEC710 receiver listed in the Engineering Study included with the Illinois Signal Comments. Table III, below, is a summary of the calculation of the predicted desired signal at the WPEC710 receiver location. Table IV, below, is a summary of the calculation of the undesired WCIA DTV Channel 5 signal at the WPEC710 receiver.

[‡‡] Motorola estimated the LM receiver interference threshold desired to undesired ratio to be about +7 dB. See *Comments of Motorola* in MM Docket No. 87-268.

Table III – Calculation of Desired Signal at WPEC710 Receiver	
Parameter	Value
Distance from desired transmitter to receiver	58.5 km
Bearing from desired transmitter to receiver	117.9° True
WPEC710 maximum EIRP (ERPdipole=200 W)	+55.2 dBm
WPEC710 transmitting antenna horizontal pattern discrimination	0.0 dB
Free-space path loss (758.5km) (75 MHz)	-105.3 dB
Receive antenna gain	+9.2 dBi
Receive antenna horizontal pattern discrimination	0.0 dB
Receive line loss	-2.0 dB
Received desired WPEC710 power	-42.9 dBm

Table IV – Calculation of Undesired DTV Signal at WPEC710 Receiver	
Parameter	Value
Distance from undesired transmitter to receiver	14.6 km
Bearing from undesired transmitter to receiver	61.4° True
Proposed nominal EIRP (ERPdipole=4.5 kW)	+68.7 dBm
Out of band emissions (worst-case, band edge)	-41.4 dB
Coupling factor DTV into LM receiver	-25.6 dB
Cross-polarization discrimination	-20.0 dB
Free-space path loss (14.6km) (75 MHz)	-93.3 dB
Receive antenna gain	+9.2 dBi
Receive antenna horizontal pattern discrimination (at 241.4° True)	-5.0 dB
Receive line loss	-2.0 dB
Received undesired DTV interference power	-109.4 dBm

Based on the above conservative calculations, the desired to undesired ratio at this receive location is calculated to be (-42.9 dBm – (-109.4 dBm) =) +66 dB. This is well below the

threshold level for interference to the LM system receiver.[§§] Therefore, it is concluded that there will be no interference to the WPEC710 receiver or its LM related systems.

Comments of DeWitt County Sheriff's Office

At its closest point, DeWitt County, Illinois is located approximately 19 km west of the proposed WCIA Channel 5 DTV transmitter site. The DeWitt County Sheriff's Office employs frequencies ranging from 72.22 MHz to 72.78 MHz as part of its communications systems licensed to KJC802. It has expressed concern about possible interference from the proposed DTV Channel 5 facility.

The DeWitt County Sheriff's Office comments do not provide sufficient information to permit a detailed analysis of the potential interference from the proposed DTV operation to the DeWitt County system. However, the bandwidth, polarization and propagation loss factors discussed above are equally applicable to the DeWitt County System. Therefore, the detailed analyses summarized above in connection with the McLeodUSA and the Illinois Signal systems are analogous to the situation that would exist with respect to any of the DeWitt County receivers in the 72-76 MHz band.

The McLeodUSA and Illinois Signal interference analyses conclusively demonstrate that there will be a very wide margin to interference to operations in the 72-76 MHz band based on a conservative out-of-band emission factor of 41.4 dB for the band edge. The FCC emission mask for DTV stations requires out of band emissions to be attenuated by 75.9 dB for frequencies removed by 3 MHz from the band edge. This is an additional 34.5 dB attenuation above the level assumed in the interference calculations outlined above. Since the KJC802 facilities are more than 3 MHz removed from the Channel 5 lower band edge, there will be even greater attenuation with respect to those facilities. On this basis, it is concluded that there will be no interference to the DeWitt County Sheriff's Office KJC802 communications system.

[§§] Motorola estimated the LM receiver interference threshold desired to undesired ratio to be about +7 dB. See *Comments of Motorola* in MM Docket No. 87-268.

Comments of Moultrie County Sheriff's Office

At its closest point, Moultrie County, Illinois is located approximately 35 km south of the proposed WCIA Channel 5 DTV transmitter site. The Lake Shelbyville area is located no closer than 50 km from the WCIA Channel 5 DTV transmitter site. The Moultrie County Sheriff's Office employs repeaters operating on 72.30 MHz as part of its communications systems. It has expressed concern about possible interference from the proposed DTV Channel 5 facility.

The Moultrie County Sheriff's Office comments do not provide sufficient information to permit a detailed analysis of the potential interference from the proposed DTV operation to the Moultrie County system. However, the bandwidth, polarization and propagation loss factors discussed above are equally applicable to the Moultrie County System. Therefore, the detailed analyses summarized above in connection with the McLeodUSA and the Illinois Signal systems is analogous to the situation that would exist with respect to any of the Moultrie County receivers in the 72-76 MHz band.

The McLeodUSA and Illinois Signal interference analyses conclusively demonstrate that there will be a very large margin to interference to operations in the 72-76 MHz band based on a conservative out-of-band emission factor of 41.4 dB for the band edge. The FCC emission mask for DTV stations requires out of band emissions to be attenuated by 75.9 dB for frequencies removed by 3 MHz from the band edge. This is an additional 34.5 dB attenuation above the level assumed in the interference calculations outlined above. Since the Moultrie County facilities are more than 3 MHz removed from the Channel 5 lower band edge, there will be even greater attenuation with respect to those facilities. On this basis, it is concluded that there will be no interference to the Moultrie County Sheriff's Office 72.30 MHz repeater system.

Comments of Macon County, Illinois

At its closest point, Macon County, Illinois is located approximately 25 km southwest of the proposed WCIA Channel 5 DTV transmitter site. Macon County employs frequencies ranging from 75.80 MHz to 75.98 MHz as part of its county communications systems. It has expressed concern about possible interference from the proposed DTV Channel 5 facility.

The Macon County comments do not provide sufficient information to permit a detailed analysis of the potential interference from the proposed DTV operation to the Macon County system. However, the bandwidth, polarization and propagation loss factors discussed above are equally applicable to the Macon County System. Therefore, the detailed analyses summarized above in connection with the McLeodUSA and the Illinois Signal systems is analogous to the situation that would exist with respect to any of the Macon County systems receivers in the 72-76 MHz band. The interference analyses prepared for both the McLeodUSA and Illinois Signal systems made the conservative assumption of an out-of-band emissions factor equal to that which would exist at band edge. Therefore, although the Macon County systems operate at frequencies as close as 20 kHz to the Channel 5 band edge, the interference analyses prepared for McLeodUSA and Illinois Signal are applicable and illustrative of the wide margin to interference to the Macon County system.

The McLeodUSA and Illinois Signal interference analyses summarized above conclusively demonstrate that there will be a very large margin to interference to operations in the 72-76 MHz band based on a conservative out-of-band emission factor of 41.4 dB for the band edge. These interference analyses were based on receive locations that were located in closer proximity to the proposed WCIA Channel 5 facility than the closest point of Macon County. These analyses demonstrated desired to undesired signal levels exceeding 50 dB. This is such a wide margin to interference that there is little likelihood of interference to the Macon County facilities. On this basis, it is concluded that there will be no interference to the Macon County 72-76 MHz communications system.

Conclusion

Based on the above, it is concluded that the proposed Channel 5 DTV operations will not cause objectionable interference to any 72-76 MHz communications systems. However, in the unlikely event that such interference does occur, Midwest will cooperate in the elimination of any objectionable interference.

Louis Robert du Treil, Jr., P.E.

du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237
(941)329-6000

November 22, 1999